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State of Utah
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DIVISION OF OIL, GAS AND MINING

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May 1, 2001

TO: [redacted] 1-File

FROM: Gregg A. Galecki, Reclamation Specialist & Team Lead

RE: Leach Field Addendum A-1, Canyon Fuel Company, LLC, Dugout Canyon Mine, [redacted] M01A

SUMMARY:

The following is a review of the proposed amendment to include the construction of a waste water leach field for the Dugout Canyon Mine. The application was received by the Division on March 26, 2001. The following is a review of the application from a hydrological prospective.

TECHNICAL ANALYSIS:

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Ground-water monitoring

The location of the proposed Leach Field is mapped in Quaternary-aged pediment gravels, adjacent to alluvial sediments. No test wells were drilled in the leach field area to determine if groundwater existed at depth. However, while conducting the soil survey three holes were augered to 80-inches, 90-inches, and 95-inches, respectively. No subsurface water was encountered at these depths while conducting the soil survey. DEQ regulations require that

the leach fields must exist at least 4 feet above bedrock, which is fulfilled. The affect on the groundwater in the area is expected to be minimal. Groundwater will not be encountered or used during construction, maintenance, and reclamation of the leach field.

Findings:

Information in the proposal is adequate to meet the requirements of this section of the regulations.

Surface-water monitoring

Dugout Creek, an intermittent drainage, is located approximately 150 ft west and down-slope of the proposed leach field. The nearest Surface-water monitoring point on Dugout Creek is MD-1, which is located approximately 4600 ft upstream of the proposed leach field. Recorded flows range from 1 gpm to 4500 gpm demonstrating the wide variability in the flow regime. Specific Conductance observed at MD-1, ranging from 450 to 1317 umhos/cm, is not representative of the potential water quality downstream of the leach field due to a change in geology. The water quality in the vicinity of the proposed leach field drains portions of the Mancos Shale which greatly down grades the water quality. No potential uses of the surface or ground water are adversely affected by any potential impact from the proposed leach field.

Findings:

Information in the proposal is adequate to meet the requirements of this section of the regulations.

Stream buffer zones

The leach field itself is not located within the 100-ft buffer zone, although the proposed sewer line route is within the 100-ft buffer at several locations. The sewer line will be buried in the ditch on the opposite side of the county road. The ditch will be restored to its original condition upon completion of construction activities.

Findings:

Information in the proposal is adequate to meet the requirements of this section of the regulations.

Siltation structures

Additional contributions of suspended solids and sediment to stream flow or runoff outside the permit area will be prevented to the extent possible using silt fences, berms, straw bales, and surface roughening. A total of two berms will be constructed at the leach field construction site. The upper berm is approximately 350-ft long and diverts undisturbed runoff around the site. The lower berm is approximately 160-ft long and diverts runoff from the disturbed area toward a silt fence to be treated prior to entering a ditch paralleling the main access road. Construction of the berms was based on a 10 yr-6 hr storm event of 1.35-inches. The silt fences will be installed before construction begins.

Findings:

Information in the proposal is adequate to meet the requirements of this section of the regulations.

RECOMMENDATION:

Based on hydrologic data provided in the proposed amendment, the construction of the proposed leach field will not contribute additional suspended solids and sediment to stream flow or runoff outside the permit area. The proposed amendment adequately fulfills the State requirements.

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